

ABSTRACT

The present invention is a medical infusion and aspiration system capable of accurate pulsatile delivery of high rates of flow. The system comprises a pumping mechanism, a cassette housing, a plunger and a cartridge having a reservoir area, an encoded area and a neck opening for connection to an infusion tube with an in-line sensor area where sampling probes are located. The cartridge is in threaded connection with the housing and the plunger fits within the reservoir area. The encoded area allows for an optical or electromagnetic strip containing information as to the contents and uses of the contained reagent, thus minimizing dosage mistakes. A motor is linked to the housing and causes bi-directional rotation of the plunger in relation to the housing. The plunger rotation breaks the forces of inertia and slip-stick as well as eliminate backlash. The system eliminates the need for withdrawing medicine with a needle and achieves extraordinary accuracy without error correcting software or expensive volumetric measurement and control systems.